



**WILLIAM T FUJIOKA**  
Chief Executive Officer

## County of Los Angeles CHIEF EXECUTIVE OFFICE

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December 1, 2011

To: Mayor Michael D. Antonovich  
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Supervisor Zev Yaroslavsky  
Supervisor Don Knabe

From: William T Fujioka  
Chief Executive Officer

A handwritten signature in black ink, appearing to read "W. T. Fujioka", written over the printed name.

### **STATUS OF THE CALWORKS STAGE I CHILD CARE DATA MINING SOLUTION AND DATA MINING SOLUTION PILOT RESULTS FOR THE IN-HOME SUPPORTIVE SERVICES PROGRAM**

The purpose of this memorandum is to report on: (1) the status of the Data Mining Solution (DMS) to target fraud in the CalWORKs Stage 1 Child Care Program, and (2) the results of the 90-day DMS pilot for the In-Home Supportive Services (IHSS) Program.

#### **BACKGROUND**

##### Data Mining Solution for Child Care Fraud Detection

On January 6, 2009, your Board instructed the Chief Executive Office (CEO) to develop a strategy for the implementation of data mining technology to target fraud in the CalWORKs Stage 1 Child Care program. The Department of Public Social Services (DPSS), in collaboration with the CEO-Service Integration Branch (SIB), released a Request for Proposals seeking a vendor to design, develop, and implement a data mining solution.

On December 22, 2009, your Board approved an Agreement with SAS Institute Inc. (SAS) to design, develop, and implement a DMS for fraud detection and prevention in the CalWORKs Stage 1 Child Care Program. The Agreement provides for the ability to add other County public assistance programs to the DMS.

*"To Enrich Lives Through Effective And Caring Service"*

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### Pilot for the IHSS Program

On December 14, 2010, your Board approved Amendment Number One to the Agreement with SAS to conduct a 90-day DMS pilot to assess the feasibility of using DMS technology to detect and prevent fraud in the IHSS Program and to establish a platform that can be leveraged to prevent fraud in other County public assistance programs. The 90-day IHSS Pilot was conducted by SAS at no additional cost to the County.

### **STATUS OF THE DMS TO TARGET FRAUD IN THE CALWORKS STAGE 1 CHILD CARE PROGRAM**

The DMS was implemented on May 9, 2011, and has proven to be an effective tool in improving the detection and prevention of fraudulent activities among individuals and groups participating in the CalWORKs Stage 1 Child Care Program, as evidenced by the following results:

- *New Fraud Referrals*

DMS-generated alerts which have led to fraud referrals that would not have been identified without the use of DMS technology. In its first four months of operation, the use of the DMS has resulted in 87 additional referrals for child care fraud investigations.

- *Early Fraud Detection*

The deployment of the DMS predictive models has allowed DPSS Welfare Fraud Prevention and Investigations (WFP&I) staff to identify and expedite the review of suspicious cases for investigation much earlier than waiting on referrals from contracted Child Care Alternative Payment Program agencies or other referral sources. Additionally, as a result of the DMS implementation of the Social Network Analysis functionality, WFP&I has uncovered two conspiracy groups consisting of 16 cases in total much earlier, thereby significantly reducing the duration of fraudulent activities.

- *Increased Efficiency*

The DMS fraud detection application identifies and assesses cases that require closer scrutiny as their profiles resemble confirmed historical patterns of fraudulent activity. This has enabled fraud investigators to focus on cases with a higher probability of fraud. Consequently, improved efficiencies in the investigative process have been achieved since fraud investigators have more time to devote to the review of these high-risk cases.

- *Improved Inter-Agency Collaboration*

Implementation of DMS technology for the Child Care investigations has facilitated collaboration between DPSS and the District Attorney's (DA) Office. Representatives from the DA's Office have concluded that the DMS technology is highly useful in identifying Child Care fraud and expediting the transfer of major fraud cases from DPSS to the DA's Office.

Under the current fraud investigations process, outcomes for newly opened and currently active investigations often have their final status determined several months later. As the DMS is in its early stages, more data will be made available in the upcoming months. For now, however, preliminary results clearly indicate that implementation of the DMS in the CalWORKs Stage 1 Child Care Program is an effective tool in fraud detection with the potential to significantly reduce financial loss in the program.

## **RESULTS OF THE 90-DAY DMS PILOT FOR THE IHSS PROGRAM**

As part of the IHSS Pilot, SAS analyzed data provided by the CEO-SIB and DPSS, and applied advanced analytical models to assess the degree to which statistical analysis could reliably identify the characteristics of IHSS Program fraud. The IHSS Pilot produced a set of preliminary predictive models that were used to detect potential fraud in the IHSS Program. These models provided a risk score for every case, which is a numerical representation of its similarity to the typical profile of perpetrators of fraud. SAS provided CEO-SIB and DPSS with one percent (1%) of the active IHSS cases that scored the highest for potential fraud. Out of this one percent of cases, 98 were randomly selected and sent to DPSS and SIB for IHSS Program review, and the results were then calculated by applying the findings back to the entire top 1% of active IHSS cases that scored the highest for potential fraud. The results of this assessment are as follows:

### ***Annual Gross Cost Avoidance of at least \$7 Million***

Analysis of the representative sample of fraud referrals revealed the potential for a total annual cost avoidance of approximately \$7 million through fraud detection in the IHSS Program. This cost avoidance comes from the DMS system's ability to generate new fraud referrals not readily detected by existing methods and make fraud referrals much earlier than is currently possible.

In this high-risk set of cases, 60 percent of them would warrant a formal fraud referral.

- Only 20 percent of these referred cases would have been discovered by existing methods. This represents a substantial increase in the number of investigation worthy cases.
- On average, detection of potential fraud occurred more than 15 months earlier than using existing methods.

The overall \$7 million in cost avoidance comes from two sources:

- 1) \$1.6 million attributed to new referrals not previously detected by existing investigation methods, based upon WFP&I's current investigation success rates and cost avoidance calculations.
- 2) \$5.4 million attributed to early detection, which reflects payments that would have been made earlier if the DMS fraud detection solution had been in place.

It may also be possible to achieve an even larger cost avoidance and restitution dollar amount by applying the DMS IHSS solution to a larger percentage of cases with the highest fraud risk scores. Additionally, the cost avoidance amount could be further increased through utilization of additional fraud detection tools not included in the pilot.

#### Funding Constraints for Implementation of DMS in the IHSS Program

The California Department of Social Services (CDSS) has advised that due to the uncertainty of revenue projections, IHSS Anti-Fraud funding for Fiscal Year (FY) 2011-12 may be in jeopardy. However, CDSS will notify the County of the availability of the Anti-Fraud funding by January 2012. To mitigate this potential funding shortfall, DPSS terminated certain aspects of the IHSS Anti-Fraud Plan effective November 1, 2011; a portion of the resulting NCC savings and associated federal revenue will be used for one-time IHSS DMS costs in FY 2011-12. If state IHSS Anti-Fraud funding is not provided in FY 2012-13 and beyond, IHSS DMS costs will be allocated across all DPSS programs, which will enable DPSS to implement and sustain data mining for IHSS on an ongoing basis.

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## **CONCLUSION**

The successful implementation of the DMS in the CalWORKs Stage 1 Child Care Program has laid a solid foundation for expansion of DMS for fraud detection across other public assistance programs. Given the expected cost saving potential demonstrated by the IHSS Pilot, unless otherwise directed by your Board, we will work with DPSS to develop and submit to your Board for approval a proposed expansion of the DMS to include the IHSS Program.

WTF:TP:CDM  
MM:MS:eb

c: County Counsel  
Executive Officer, Board of Supervisors  
District Attorney  
Public Social Services

data mining.bm